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May 1966

ARS 33-111

UNITED STATES DEPARTMENT OF AGRICULTURE  
Agricultural Research Service

## A SIMPLIFIED POLLEN TRAP FOR USE ON COLONIES OF HONEY BEES

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A good method of trapping pollen will benefit many segments of the beekeeping industry. Research has shown that supplemental pollen fed to colonies of honey bees (Apis mellifera L.) will enhance brood rearing whenever natural pollen is in short supply. <sup>2</sup>/

For collecting the pollen, traps of various designs are available; all of these are equipped with grids that function as pollen scrapers. When a bee lands on the surface of the trap and walks through the grid, the pollen is scraped from her legs and falls into a tray beneath the grid.

The first traps were placed at the bottom of the hive, but in that position they were cumbersome to handle and service. Lavie and Fresnaye<sup>3</sup>/  
then presented the idea of placing the pollen trap at a higher level in the colony. Makar<sup>4</sup>/  
improved on this concept, but the pollen traps available to him were still complex in design.

Their construction was difficult and time consuming, and their use required considerable extra manipulating of colonies. For these reasons I decided to design a new type of trap that would eliminate such problems. Accordingly, in 1964 I built an inexpensive trap. It is easy to build and install. It does not retard brood rearing, since it is in place on the colonies for such a short time. The tray can be removed without disturbing the bees. Furthermore, the bees are not disturbed drastically when the trap is installed or removed.

Enough pollen can be collected with the trap in about 10 days to feed a colony during the spring buildup. (At Madison, Wis., we use from 1 to 1-1/2 pounds of pollen for each colony whether it is overwintered or a newly established package colony.)

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<sup>1</sup>/ In cooperation with the Wisconsin Agricultural Experiment Station.  
Approved by the Director of the Wisconsin Agricultural Experiment Station.

<sup>2</sup>/ Schaefer, C. W., and Farrar, C. L. The use of pollen traps and pollen supplements in developing honey bee colonies. U. S. Bur. Entomol. and Plant Quar. E-531, 7 pp., illus. 1941. [Processed.] Rev. Oct. 1946.

<sup>3</sup>/ Lavie, P., and Fresnaye, J. Etude experimentale de la trappe a pollen en position superieure. [Experiment with a high placed pollen trap.] Ann. de l'Abeille 6 (4): 277-301, figs., tables. 1963.

<sup>4</sup>/ Makar, Stanyslaw. New concept for pollen trapping. Wis. Agr. Expt. Sta. Bul. 568, 7 pp., illus. 1964.

## Trap Design

I designed the trap so that it can be inserted at any level of the colony, except on the bottom. Figure 1 shows it in position on the colony. The best place to insert it on a single-queen colony is between the upper brood chambers, as shown in figure 1. On a two-queen colony, insert it between the two brood nests.

Bees tend to drop litter to the lower parts of the hive. If the trap is located at the bottom of the colony, the bees will contaminate the pollen tray with debris. My trap is used in an elevated position; therefore, the pollen remains cleaner than in old-style traps. Figure 2 shows the design of the trap.

### Materials Required

A list of the parts required for the trap is provided in table 1. Each part is labeled with a letter of the alphabet to correspond with the letter appearing on that particular part in figure 2.

TABLE 1. - Materials required to build simplified trap for collecting pollen for use in feeding honey bees during spring buildup

| Item in figure 2<br>and description     | Pieces<br>required | Measurements <sup>1/</sup>         |
|---|--------------------|------------------------------------|
| <u>Lumber</u>                           | <u>Number</u>      | <u>Inches</u>                      |
| A, cover                                | 1                  | 1/2 by 7-1/4 by 16-1/2 (20-1/4)    |
| B, trap hanger                          | 2                  | 1/4 by 1 by 16-1/4 (20)            |
| C, endpiece <sup>2/</sup>               | 2                  | 1 by 5-3/4 by 7-1/4                |
| D, grid support (side)                  | 2                  | 3/4 by 3/4 by 12 (15-3/4)          |
| E, pollen deflector (end) <sup>3/</sup> | 2                  | 3/4 by 3/4 by 4-1/4                |
| H, tray support                         | 2                  | 3/4 by 3/4 by 5-3/4                |
| I, back of tray                         | 1                  | 1 by 3-1/2 by 12 (15-3/4)          |
| J, end of tray                          | 2                  | 1 by 3-1/2 by 5-5/8                |
| K, front of tray                        | 1                  | 1 by 4 by 12-3/4 (16-1/2)          |
| L, side trap support                    | 2                  | 1 by 1-1/2 by 24-3/4               |
| M, end trap support                     | 2                  | 1 by 1-1/2 by 16-1/4 (20)          |
| Unlettered bottom piece                 | 1                  | 1 by 4-7/8 by 10-1/2 (14-1/4)      |
| <u>Metal hardware cloth</u>             |                    |                                    |
| F, grid 5 mesh/sq. in                   | 1                  | 12-1/2 (16-1/4) by 5 <sup>4/</sup> |
| G, tray cover 6 or 7 mesh/sq. in.       | 1                  | 12-1/2 (16-1/4) by 5-3/4           |

1/ The first three measurements given are for Langstroth hive; if working with the Farrar square hive, substitute the measurement in parentheses for the third one.

2/ With 1/4 inch deep saw kerf, 2 inches from end, and notches 3/8 inch apart for B, as shown in fig. 2.

3/ With top beveled to deflect pollen.

4/ Extra inch used in upper fold to keep grid separated.

Note that the tray has a bottom piece, which could not be shown in figure 2. All the pieces for the trap can be cut and assembled in a few minutes, and the materials needed are easily available. I used pine lumber but another type of lumber or even scrap material could be used just as well.

### Assembly of Trap

When the lumber has been cut and the other parts have been prepared, assemble the trap as follows: Place endpieces C with saw kerfs (tray cover guides) up. Nail on pollen deflector E below saw kerf 3/4 inch from either side, and nail tray support H flush with lower end. Then nail grid supports D just below the horizontal saw kerf flush with E and the edge of endpiece C. Nail on pieces B, which serve as the vertical grid guide and trap hanger. Then insert tray cover G and tack to D if necessary. Fold 1 inch of the vertical grid F over and press flat. Then fold again to form a V-bend at contact point with tray cover. The first fold will maintain proper spacing of the grid. This spacing accounts for the extra inch in width of 5-mesh screen in F. Assemble tray I, J, and K and trap support L and M.

### Fitting the Trap on the Colony

Install the trap support frame on the hive as shown in figure 1. The weight of the supers will hold the frame in place. The frame in turn will support the pollen trap. Close all other hive entrances so that the bees can enter the colony only one way - through the trap. Before the trap is inserted, the entrance should be positioned so the bees will become oriented to this location.

### Maintaining the Trap

Remove the grid from the trap every fifth day to allow the bees to replenish their own pollen supply, which they need to maintain the colony. This will prevent curtailment of brood rearing and keep colony growth from being retarded.

In humid weather empty the trays every day to prevent the pollen from molding. Even in dry weather collect the pollen at least every 2 days.

Remember that it is important to the well-being of the colony to synchronize the trapping of pollen with the major pollen flows only. The amount trapped will depend on the intensity of the pollen flow.

### Storing the Trapped Pollen

Freshly trapped pollen is perishable and must be frozen or dried. Store it in a deep freeze or dry it in a suitable drier until the pellets do not cake when you squeeze them in your hand. A 5-gallon honey can is an excellent container in which to store the dry pollen pellets.



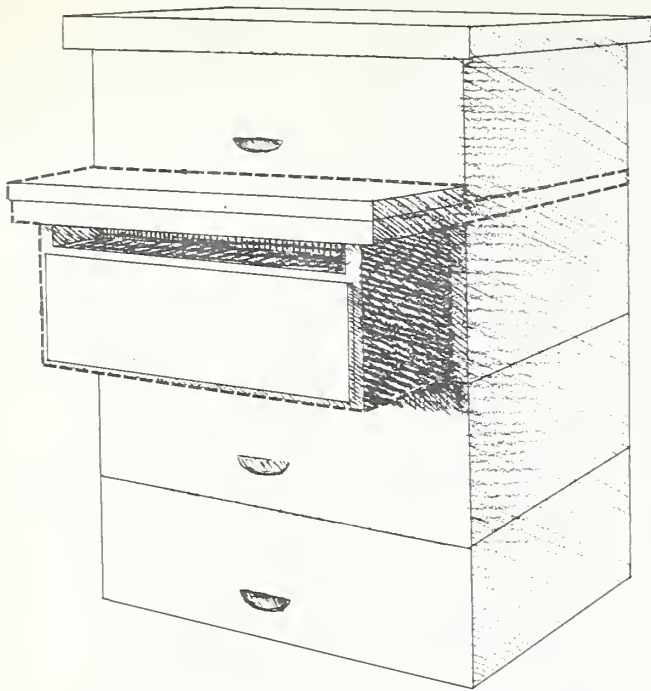


Figure 1.-Trap in position on colony.

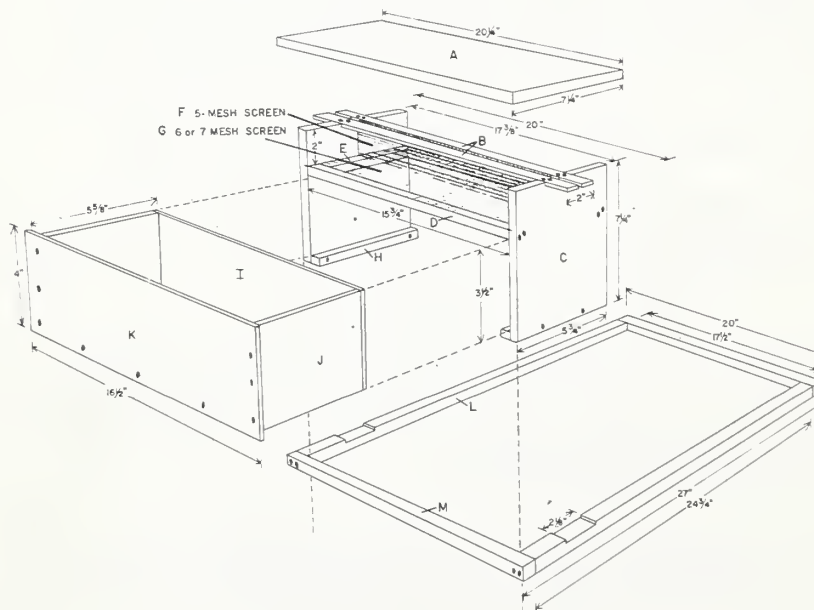


Figure 2.-Pollen trap, illustrating assembly.



